

VIRGINIA WILDLIFE

OCTOBER 2005

TWO DOLLARS





Colonel W. Gerald Massengill
Interim Director



What if you've just driven six hours across the state to your favorite fishing hole and you realize you've left your fishing license at home on the dresser? In the past, the only legal solution was to get back in the car and drive six hours to find the license or to convince your wife or your very best friend to meet you half way with it. And—the worse case scenario—if you'd lost your license, you would have had to return to the original license agent to get a duplicate and hope you remember where that might have been. Well that's not the case anymore.

Technology is now playing a big part in the way that the Department provides hunting and fishing licenses, and it's for the better. With the advent of automated license sales, the Department can now quickly solve these dilemmas. Currently, more than 45 percent of our license agents across the state are using an automated system. And you, the customer, are benefiting from this efficient, new way of doing business. For example, if you purchased your license from an agent who is using the automated system, you can go to any other automated agent anywhere in the state to get a duplicate or replacement license.

The other major convenience offered by our automated system is that you will have all your hunting privileges on one piece of paper. In the past, an avid hunter—and I'm focusing on hunting as an example since we're approaching the peak hunting season—would purchase not just a hunting license, but also a bear/deer/turkey license, a muzzleloader license, an archery license and a trapping license (this person's REALLY into the outdoors). Each one of the privileges was

represented by a separate piece of paper. And for many people, that was a lot of paperwork. For agents it involved handwriting each license and keeping on file those records each year. For the hunter it meant keeping up with all those pieces of paper. Can you imagine how many boxes of license books the Department has had to store over the years? Thousands and thousands.

With the new automated system, the license agent enters the hunter's information in an online database one time for all those privileges and then quickly prints your license. Once that information is in the system, replacing or renewing a license will take only seconds. And especially important is our assurance to all of our hunters and anglers that no sensitive information, such as social security numbers or credit card numbers, will ever be stored in the system. The automated database will use a controlled and secure Internet system maintained and hosted by the Commonwealth, just like a state drivers' license.

This convenient and efficient way of doing business will be used by all of our license agents by July 1, 2006. By then, with the exception of duck blind licenses, all licenses and privileges dealing with recreational hunting, freshwater and saltwater fishing and temporary boat registration will be available through the automated system. Saltwater boat decals and the state and federal duck stamps can even be purchased through the system, with the actual decals or stamps mailed to you after purchase. For more information about how to purchase a duck blind license, please refer to the hunting and fishing regulations booklets or visit the Department's Web site at www.dgif.virginia.gov.

Mission Statement

To manage Virginia's wildlife and inland fish to maintain optimum populations of all species to serve the needs of the Commonwealth; to provide opportunity for all to enjoy wildlife, inland fish, boating and related outdoor recreation; to promote safety for persons and property in connection with boating, hunting and fishing.

Dedicated to the Conservation of Virginia's Wildlife and Natural Resources

Commonwealth of Virginia
Mark R. Warner, Governor

HUNTING & FISHING LICENSE FEES

Subsidized this publication

Secretary of Natural Resources
W. Tayloe Murphy, Jr.

Department of Game and
Inland Fisheries
Colonel W. Gerald Massengill,
Interim Director

Members of the Board

Sherry Smith Crumley, Buchanan; Board Chair
C. Marshall Davison, Hague
William T. Greer, Jr., Norfolk
James W. Hazel, Oakton
C. T. Hill, Midlothian
Randy J. Kozuch, Alexandria
Will McNeely, Charlottesville
John W. Montgomery, Jr., Sandston
Richard E. Railey, Courtland
Thomas A. Stroup, Fairfax
Charles S. Yates, Cleveland

Magazine Staff

Lee Walker, Editor
Mel White, Ron Messina, Julia Dixon,
Contributing Editors
Emily Pels, Art Director
Carol Kushlak, Production Assistant
Staff Contributors: Carol Heiser

Color separations and printing by Nittany
Valley Offset, State College, PA.

Virginia Wildlife (ISSN 0042 6792) is published monthly by the Virginia Department of Game and Inland Fisheries. Send all subscription orders and address changes to *Virginia Wildlife*, P. O. Box 7477, Red Oak, Iowa 51591-0477. Address all other communications concerning this publication to *Virginia Wildlife*, P. O. Box 11104, 4010 West Broad Street, Richmond, Virginia 23230-1104. Subscription rates are \$12.95 for one year, \$23.95 for two years; \$2.00 per each back issue, subject to availability. Out-of-country rate is \$24.95 for one year and must be paid in U.S. funds. No refunds for amounts less than \$5.00. To subscribe, call toll-free (800) 710-9369. Postmaster: Please send all address changes to *Virginia Wildlife*, P.O. Box 7477, Red Oak, Iowa 51591-0477. Postage for periodicals paid at Richmond, Virginia and additional entry offices.

Copyright 2005 by the Virginia Department of Game and Inland Fisheries. All rights reserved.

The Department of Game and Inland Fisheries shall afford to all persons an equal access to Department programs and facilities without regard to race, color, religion, national origin, disability, sex, or age. If you believe that you have been discriminated against in any program, activity, or facility, please write to Virginia Department of Game and Inland Fisheries, ATTN: Compliance Officer, 4010 West Broad Street, P.O. Box 11104, Richmond, Virginia 23230-1104.

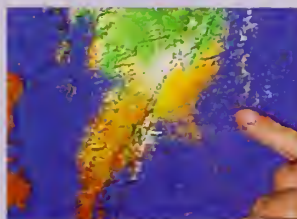
"This publication is intended for general informational purposes only and every effort has been made to ensure its accuracy. The information contained herein does not serve as a legal representation of fish and wildlife laws or regulations. The Virginia Department of Game and Inland Fisheries does not assume responsibility for any change in dates, regulations, or information that may occur after publication."

OCTOBER CONTENTS



4 Old Man of the Mountain by William H. Funk

A fascinating look into the mystical and often misunderstood life of the common raven.



10 Rivers in the Sky by Daniel White

Thanks to new space-age technology ornithologists are finding a very unique way of tracking migratory songbirds.



14 Where There's a Will, There's A Way by Tee Clarkson

Wheelin' Sportsmen aims to bring outdoor opportunities to hunters who are disabled.



19 Seed Journeys by Carol A. Heiser

This month *Wild in the Woods* sows a tale of wonder from our natural world.



23 So, What's For Dinner? by Bruce Ingram

Learning what deer like to eat is a great way of improving your hunting success.



27 Virginia Wildlife Outdoor Catalog

Unique gifts for the outdoor enthusiast.

35 OCTOBER JOURNAL

36 On The Water *Courtesy Afloat*

37 Recipes *Buffleheads Are Excellent Table Fare*

38 Naturally Wild *Virginia Rail*

About the cover:

Of the billions of birds that migrate across North America the blackpoll warbler is considered one of the top marathon flyers. Each year this tiny bird, which weighs less than an ounce and is only 4 inches long, travels an incredible journey of

around 12,000 miles. Its annual migration route takes it from Canada, down along the Eastern seaboard, then out to sea to the north coast of South America. The warblers non-stop flight over the Atlantic can take up to 90 hours and requires them to go without rest, water and food. ©Rob & Ann Simpson

VIRGINIA WILDLIFE

Magazine

Subscriptions

For subscriptions,
circulation problems and
address changes call

1-800-710-9369

12 issues for \$12.95

24 issues for \$23.95

old



Man of the Mountain

A bird's eye view of one of the most revered and reviled birds of Virginia, the northern raven.

by William H. Funk
illustrations by Spike Knuth

Hawksbill Mountain Overlook, Shenandoah National Park, April 4th. A warm bright afternoon, hushed with the expectant feeling of early spring. Clouds of gnats swarm smokily before me in procreative ecstasies. A vast ringing silence, arching over the Shenandoah Valley below, is occasionally impinged upon by the surf-like roar of trucks on Highway 211 as they highball into the small town of Luray, 4,049 feet straight down. Across the valley, where emerald fields of winter wheat and pastel-budded trees give assertive evidence of the sun's return, the Alleghenies troop away to the northeast and southwest in hulking columns paralleling the Blue Ridge. Through the thick living April air I see Massanutten Mountain looming murkily to the west. Up here, the bare rock cliffs and naked deciduous trees speak of a winter only recently departed: dun clumps of dry grass, lichen-scaled boulders and outcrops of ancient limestone sprawl below my deserted overlook, flanked by stunted red spruce and leafless yellow birch. Up above, romance-minded turkey vultures revolve about each other in mutespirals.

In this utter stillness one can almost hear the trees breathing. As I watch a file of ants vanishing into a crevice in the rock face at my feet, from far away, or so it seems, there comes floating down, like a feather, the ethereal croaking call of the raven.



Looking up with binoculars I see a black cruciform image with pointed wings and a long, wedge-shaped tail floating far up in the blue. He gives another distant yelping cry and is immediately answered; a second raven glides motionlessly toward him from over my shoulder and rapidly closes the distance. They circle one another in perfect synchronization, and only the absolute quiet of my lone lookout allows me to hear their distant murmured conversation of seemingly tender burblings and *awks*. Suddenly one bird folds his wings and plunges toward the valley like a stone; the other bird, after completing her circle (I assign the sexes arbitrarily), follows in a steep spiraling descent with wings half extended and legs down, making a series of loud bell-like trills. Her mate's precipitous swoop had taken him almost to the valley floor, from which he rises with seemingly

undiminished speed in a tight arc that terminates just below the slowly downspiraling female, and as she appears above him he flips upside-down and grasps her claws with his, then holding each other in total silence they plummet straight down with all four wings held out at full length over their backs, rotating one over the other like the vanes of a collapsing windmill as they tumble in a vertical drop of thousands of feet. Fifty yards or less from a jumble of limestone boulders the pair gracefully separate, like disengaging dancers, and with one accord peel skyward again with consummate grace and skill. Everything that falls must diverge; the two mated ravens, having impressed each other once again of their lifelong devotion, resume their solemn ascending spirals until they are quite lost in the sun.

What is the raven? The northern or common raven (*Corvus corax*) is a circumpolar species and was once present throughout North America, Europe, the North African coast and northern and central Asia. The largest songbird in North America, Virginia's ravens (subspecies *principalis*) have a wingspan of over 4 feet, a length of 27 inches from bill to tail and weigh in at 2.7 pounds and more—four times as heavy as their crow cousins. Raven feathers are a rich lustrous ebony, occasionally revealing a metallic gloss of green or deep purple. The heavy, powerful black bill, up to 3.25 inches long, is

The northern or common raven is larger than a crow. It has a large, stocky bill, ragged throat feathers, a wedge-shaped tail and is an excellent flier.

slightly hooked at the end of the upper mandible, indicative of the birds' penchant for meat. The nostrils are hidden beneath thick bristling whiskers and a shaggy beard of throat feathers can be ruffed out to almost touch the ground. Ravens are often mistaken for common crows (*Corvus brachyrhynchos*) but besides being a good deal larger they exhibit an even more involved social behavior. From below flying ravens show distinct, hawk-like "fingers" in their extended primary feathers, and their tails are long and taper to an obtuse triangle. Their flight, which can include barrel-rolls, steep dives and remarkable bursts of speed, also features prolonged bouts of full-winged soaring, a trait crows are incapable of and which has prompted hawk watchers to designate ravens as "honorary raptors."

Ravens mate for life. Both sexes build the bulky nest of freshly-broken limbs, usually under an overhang on a lonely rock cliff or tall in an

isolated evergreen tree, and both tend to the young, the male bringing food to the female who typically broods 4 to 5 speckled blue/green eggs from early March to mid-April. Ravens seek nesting areas remote from the noisy activities of mankind, a preference which led to their local demise by the early part of the last century as much of Virginia's mature forestland had, by then, been obliterated. As with many of our rare and wilderness-loving species, the protection from development of federal lands in the mountainous west and the institution of science-based hunting regulations has led to the raven's resurgence: the Virginia Department of Game and Inland Fisheries now lists the species as "common" in 28 counties and a "known resident" in 41.

Ravens are omnivorous, eating all manner of insects, fruit, eggs,

nestlings, small vertebrates and unspoiled carrion. They are a highly intelligent and opportunistic species, more than willing to take advantage of edible human garbage if allowed to and almost incredibly adept at locating and benefiting from hunters' refuse. Taxonomists view the corvids—ravens, crows, magpies, jays and their kin—as the earth's most rapidly-evolving family of birds, characterized by superior intellect, large size, a tendency toward ground foraging and open spaces, and astonishing powers of adaptation.

The foraging behavior of ravens is indicative of their versatility. Judging from regurgitated castings of indigestible material (hair, bone, toenails), ravens actively hunt a wide range of small rodents but also pos-



sess the ability to subdue larger prey such as rabbits, pigeons and ptarmigan. Their ability to seek out carcasses is legendary, a crucial skill which allows them to survive the long winters of their northern range. Ranchers have long distrusted the raven, claiming that it kills newborn lambs and calves. But over the course of several years' conducting autopsies of lambs found dead with ravens in attendance, researchers in Germany have demonstrated that the vast majority of the livestock being fed upon had died of genetic defects or crippling sickness before the birds ever noticed them; seeing dead or dying animals below, the entrepreneurial ravens had merely taken advantage of the immediate situation.

Animals with complex social structures, such as humans, whales and ravens, rely upon extensive and in-

tricate vocalizations to make themselves understood in their societies. Raven calls are notoriously varied: some of the old mountain men say that if you hear an unidentifiable animal noise in the woods, it's probably a raven. In *Our Southern Highlanders*, his classic book of early 1900s Appalachian life, Horace Kephart notes that "the raven croaks, clucks, caws, chuckles, squalls, pleads, grunts, barks, mimics small birds, hectors, cajoles—yes, pulls a cork, whets a scythe, files a saw—all with his throat." In fact ravens are believed to have greater diversity of vocal patterns than any other animal except humans. Biologist Richard N Conner, formerly of Virginia Tech, recorded a bewildering series of raven calls in Virginia's southwestern mountains: "Caw, growl-like, whine, rattle, caw-lup, staccato caw, awk, cluck, kow, bell-like, ku-uk-kuk, ko-pick, awk-up, woo-o-woo, uvular, o-ot, puddle and ke-aw." Each of these distinct calls, given in numerous patterns and arrangements, means something specific to the intended audience, and interpreting "ravenese" is even more daunting when we realize that these birds, like us, have distinct regional dialects or accents that differ greatly with distance. For a language of Holarctic range the opportunities for linguistic variance are practically inexhaustible.

Their sheer capability for sound has caused scientists to despair of ever coming to grips with what ravens are saying to each other.

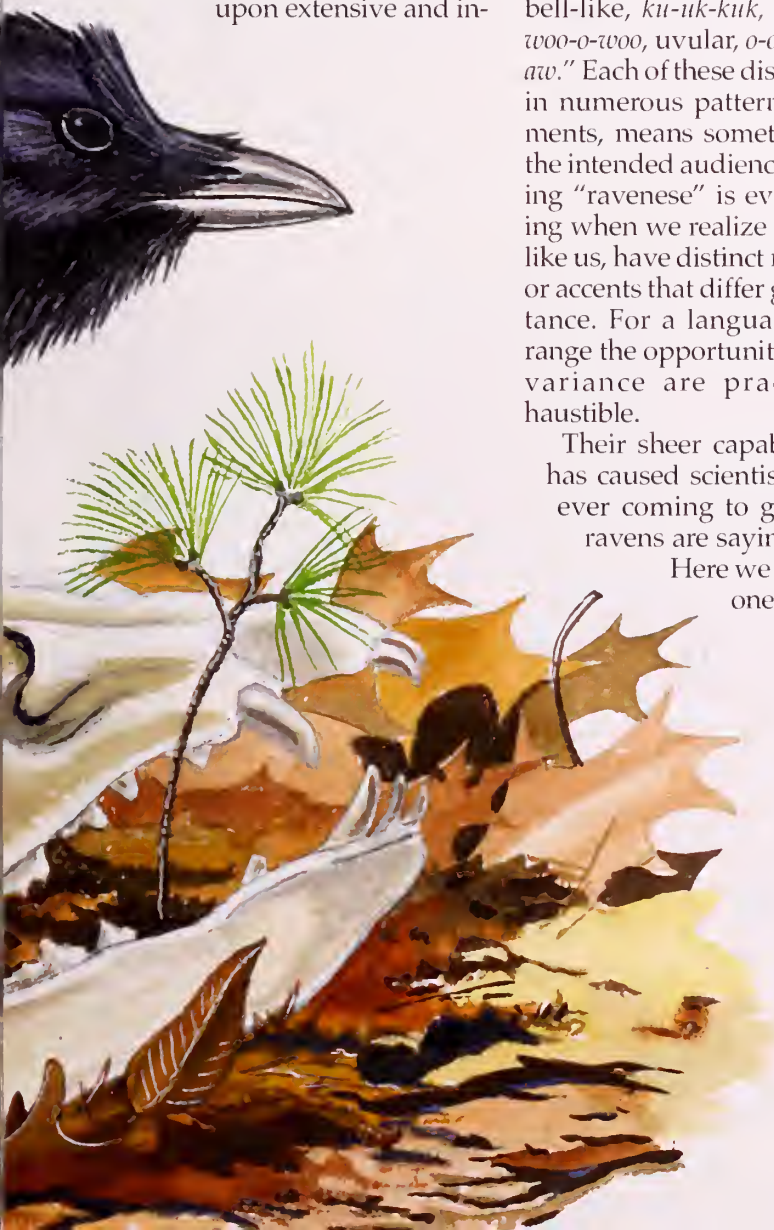
Here we have an animal, one that flies above

the heads of a good percentage of the Commonwealth's population, which aside from its own vast and inimitable vocabulary can easily mimic other birds, dogs barking, running water, church bells, gunfire, diesel engines, and the most intimate inflections of human speech. And it is their facility to produce such a broad repertoire of sounds and calls that first galvanized scientific interest in the raven's fabled intelligence.

Ravens have a higher rate of "encephalization," or brain mass relative to body size, than any other bird, and stories of incredible feats of raven mental prowess are legend. There's the individual who carefully laid walnuts down on a street for traffic to break for him and the raven who dropped clams from great heights onto rocks; the female observed deliberately poking holes in the bottom of her nest to provide ventilation for her overheated chicks; the other that soaked herself in a cold stream then returned to cool her fledglings with her wet breast feathers; the repetitive use of sticks and bones as tools; cooperative raids conducted by ravens against wolves, dogs, bears and raptors, in which individuals take turns providing distraction while others fly in to steal food; and finally the numerous reports of ravens accumulating a pile of food items, then flying off with them all at once—cleverly stacked or entwined—rather than leaving them behind and unguarded.

Play, particularly among adult animals, is viewed by sociobiologists as indicative of higher intelligence: the necessities of life such as food and security having been taken care of, species including wolves, dogs, humans and ravens regularly take part in recreational activity that strengthens social bonds. Raven play, unobserved in any other birds save parrots, can involve pranks and gentle vandalism, snow-sliding contests,

Ravens will eat a wide variety of food sources including plant and animal matter. They are well known as master scavengers and will hide or "cache" food supplies for future meals.





hanging upside-down and yodeling, and playing tag, catch-the-stick and keep-away. Toys are also recruited by playful ravens, a behavior known elsewhere only among primates, canines and dolphins.

Games can lead to more serious performances, as raven "culture" seems to value bravery as much as our own. Dominant males, after calling in their mates and subordinate birds as witnesses, will cautiously approach an uncertain food source such as a frozen carcass, touch it (usually with a swift kick), then strut back to their audience in full courtship display of ruffled throat and head feathers and raised wings to the screams of their apparently delighted onlookers. If a carcass or similarly uncertain food source isn't to be found, riskier alternatives like feeding wolves or raptors are tested. Scientists see a logical explanation for this potentially dangerous behavior (which sounds similar to the Plains Indian warriors' custom of counting coup) in the territorial imperative: males must provide food for their mates in breeding season; to claim and secure food sources the male must hold a defined territory through social dominance; bringing the female and subordinates to the food source (or alternatively to riskier encounters) and displaying mastery over the situation proves the male's continuing ability

to find, control and provide sustenance in a protected environment.

For much of the year foraging is a relatively simple process, but the winter months—even here in the relatively balmy Appalachians—bring enormous challenges to nonmigratory species. It was their remarkable ability to find food under any circumstances that initially intrigued Dr Bernd Heinrich, a professor of biology at the University of Vermont, author of two essential raven books and perhaps the country's foremost expert on *Corvus corax*. Over the course of several years in the New England woods, Heinrich observed paired couples actively defending scarce food sources (usually winter-killed deer) from other ravens, but single birds, presumably unmated, were seen to loudly call for others to join them at the carcass, an instance of seeming altruism unrecorded in avian behavior. Through exhaustive experimentation Heinrich concluded that the singles were juveniles dispersed from their natal range and living with other unmated birds at communal roosts. Highly cautious of traps or ambushes on the ground, a young raven finding a carcass calls in other singles so as to gather strength in numbers, thereby not only gaining access to the food source but potentially increasing its social status and its desirability as a mate and provider.

This deliberate sharing of food—a seeming sacrifice of immediate gluttony for long-term ends—had previously been unrevealed and has led other scientists to regard the raven as sociobiologically unique among non-human animals.

An evolutionary product of the barren grounds and immense conif-

erous forests of the northern hemisphere's sub-arctic taiga, the meat-eating raven has for millennia depended upon large predators to secure prey for them. Bernd Heinrich says that "Ravens associate with any animals that kill large game—polar bears, grizzlies, wolves, coyotes, killer whales, and humans. All large-scale northern hunters have their retinues of attending ravens. In the Arctic the Inuit and other native peoples know when the caribou arrive on their migrations by the announcements of the ravens who travel with them and feed on the kills of the wolves along the flanks of the herds." Ravens are even known to intentionally call out to hunting wolves when they find likely prey, then through agility and teamwork claim a share of the resulting kill. Working together, ravens have been observed taking turns pulling a wolf's (or an eagle's) tail while another raven swoops in to seize a chunk of meat. Given their flexible foraging behavior it is no surprise that with the advent of humans in their midst ravens became equally skilled at "cooperating" with these new and deadly efficient hunters.

From our earliest days as a species humans have glorified and enshrined those animals whose abilities most impressed them. Through Paleolithic rock carvings, the battle pennants of medieval knights and the monikers of professional football teams, we seek to absorb valued attributes of our animal kin for our own use. The raven's image was painted in the caves at Lascaux along with mammoths and cave bears. The Kwakwilt and other Northwestern Amerindian tribes experienced the raven god Kwekwaxa'we as a Promethean creator and carved his great bill into their totem poles. English fishing villages panicked when the Viking dragonships came from across the North Sea with stylized ravens painted on their billowing

While in the air ravens can be easily identified by their flight patterns. They often soar at great heights and engage in aerial acrobatics, which can involve flips, rolls, dives and moments of gliding through the air.

sails. The early Scandinavians, like all Northern peoples, revered the knowledge and cunning of *ravn*; their god Odin the Allfather deployed two ravens named Thought and Memory each morning to gather news of the world. Ravens had doubtless led ancient Nordic hunters to game as they did and do hunters in Siberia and North America. But ravens and other scavengers are indiscriminate about the carcasses they feast upon, and will as readily take advantage of a warrior's as a hunter's leavings. Indeed, ravens and their Old World corvid cousins—hooded and carrion crows—were regular attendants upon European battlefields and so became ingrained in the Western mind as harbingers of slaughter and death. In *Beowulf* we read that “the swept harp/ won't waken warriors, but the raven winging/ darkly over the doomed will have news,/ tidings for the eagle of how he hoked and ate,/ how the wolf and he made short work of the dead.”

This Anglo-Saxon image of the “grim and ghastly raven” eventually

became transplanted to the Americas, where along with other unconscious baggage (such as a vicious prejudice concerning wolves), it helped excuse depredations against ravens until quite recently. The image of the raven as a prophet of evil found its most persuasive advocate, of course, in Edgar Allan Poe. Poe's uninvited guest from “the Night's Plutonian shore” served only to confirm, relentlessly, the narrator's doom-struck hopelessness—the result, as if often the case, of love irretrievably lost. For Poe's midnight-moored protagonist there would be no balm in Gilead, during that long night in bleak December or at any other time; the raven upon which he transferred his angst spoke of his own inner negation.

But for those who cherish what fragments we've managed to preserve of Virginia's native heritage, the wilderness-dependent raven must be a shining symbol of hope for what we may yet do to save and reclaim the habitat of our remaining wildlife. The northern raven, enigmatic, gregari-

ous, eerily intelligent, is no longer a portent of doom—his distant raucous croak speaks instead of the faith we still maintain that wild places and wild animals may yet be afforded the protection they need to work out their separate destinies amid our dominion. □

William H. Funk is a freelance conservation writer living in the Shenandoah Valley. He may be reached at williamfunk3@verizon.net.

Works cited in order of appearance:

Connor, Richard N: “Vocalizations of Common Ravens in Virginia,” *Condor* 87:379-388, as quoted in Heinrich, *Ravens in Winter*, p. 248.

Heinrich, Bernd: *Ravens in Winter*, Summit Books: New York (1989), p. 21.

Heaney, Seamus: *Beowulf: A New Verse Translation*, FSG: New York (2000), p. 203.

Kephart, Horace: *Our Southern Highlanders*, University of Tennessee Press: Knoxville (1984), p. 67.





Rivers in the Sky

*Bird watching
reaches new heights
with the high tech
use of radar.*

by Daniel White

Along the brushy margins of an emerald field, nervous whitetail deer stand browsing late-summer soybeans. Beyond the bean rows, Oyster Harbor reaches toward Virginia's barrier island wilderness, including Cobb Island, barely visible on the horizon. Above this tranquil landscape, in a sky tinged purple by the setting sun, a large pale antenna rotates in continuous whirring motion atop a 60-foot tower. At the tower's base and through the doorway of a shipping container, several individuals squeeze between panels of blinking gadgets to hover excitedly over a computer monitor.

It's a scene reminiscent of the villain's lair in a James Bond movie. This seemingly incongruous, bunker-like structure, however, may yield keys to future conservation suc-

With new advancements in weather radar systems scientists are now teaming up with ornithologists to adapt the technology, so they can track and monitor migrating birds as they pass through Virginia's Eastern Shore.

©Daniel White

cess on the Eastern Shore and to the continued survival of migratory songbirds.

"This is the most exciting project I've been involved in over my 28 years with The Nature Conservancy," says Barry Truitt, chief conservation scientist at the Virginia Coast Reserve (VCR), headquartered in nearby Nassawadox.

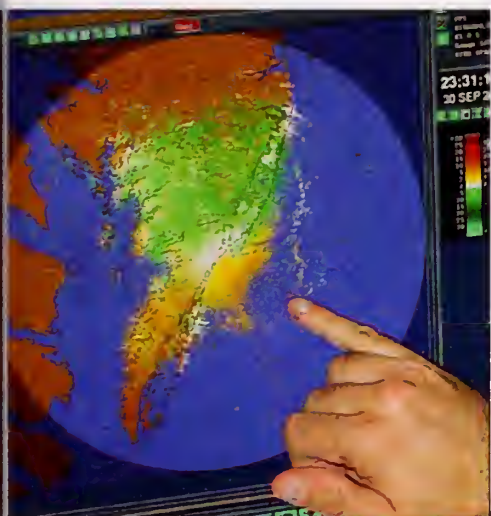
Truitt is referring to the serendipitous partnership that brought NASA and its state-of-the-art NPOL radar to the Conservancy's property at Oyster. While NASA scientists are studying the nature of rainfall, Truitt and a network of ornithologists are using the radar to track migration patterns along the Eastern Shore, one of the world's most significant habitats for birds.



©Byron Jorjorian

given area during spring and fall migrations, most people are in the dark, quite literally, when it comes to visualizing this spectacular natural phenomenon. Because these enormous flocks take flight only after sunset, they remain practically invisible. At one time, researchers had to attempt to count birds as they flew across the backdrop of a full moon.

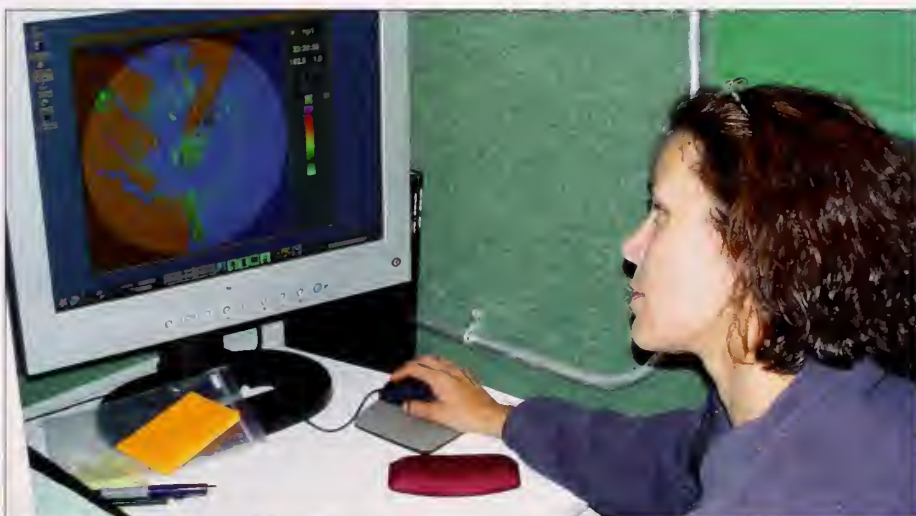
But as radar technology evolves, this veil of darkness continues to lift. Gauthreaux traces the origins of his research back to 1959, when he first began studying weather surveillance radar by tapping into the network of existing radar facilities at National Weather Service installations. His studies revealed the patterns created by flocks of birds during spring and fall migrations, focusing particularly



©Daniel White

October is prime time for migration on the Shore, for the birds as well as the people who also flock to the peninsula. As participants in the annual Eastern Shore Birding Festival, they come to see, learn about, and revel in the birds' seasonal passage. Based at the Best Western Sunset Beach Resort, located near Cape Charles, the Birding Festival celebrates the fall migration of neo-tropical songbirds and raptors.

This year's Birding Festival, which will take place October 7, 8 and 9, 2005, will offer registered participants opportunities to learn from the most renowned authority in the field of radar ornithology and to tour the innovative radar project at Oyster.



©Daniel White

The festival's keynote speaker is Dr. Sidney Gauthreaux, director of the Clemson University Radar Ornithology Lab in South Carolina and a pioneer of this unusual scientific field. Professor Gauthreaux will present a workshop entitled, "Using Weather Radar to Monitor Bird Migration."

Though millions of neo-tropical songbirds may fill the skies over any

Thanks to NASA and the NPOL radar system, ornithologists will be able to track and collect important information on the migrating patterns of thousands of birds as they pass through Virginia's Eastern Shore.



©Dwight Dyke

on mass flights over the Gulf of Mexico.

"Since 1992," according to Gauthreaux, "the use of modern Doppler weather radar has 'revolutionized' the study of bird migration." The nationwide NEXRAD radar system that influenced much of Professor Gauthreaux's work is the familiar Doppler radar from television weather reports. This system depicts patterns of targets—whether rainstorms or flocks of birds—and can determine flight direction and velocity.

Enter the latest advancement. A little over two years ago, searching for a site roughly midway between existing radar facilities at Wallops Island and Wakefield, NASA focused on Oyster, where the Conservancy owns the historic Cobb Island Station and some 1,400 acres around the harbor. In approaching VCR about hosting a new type of radar system, NASA scientists described their intent to study rainfall.

Truitt immediately recognized that the new NPOL radar system NASA was proposing for Oyster would be far more powerful than NEXRAD. "I said, 'wait a minute—you mean this thing is sensitive enough to see raindrops?'" Truitt states.

Naturally, Truitt then asked about the radar's capability to detect birds in flight. He learned that weather radar technicians normally apply filters to screen out not only birds, but also insects. At that point the proverbial light bulb clicked on. "Well, you can keep the filters off, can't you?" Truitt asked.

In fact, since the NPOL could eventually be used to measure raindrops, Truitt predicts that ultimately it should also be possible to calibrate the size of individual birds. If so, then researchers would be able to use the NPOL radar to delineate songbirds from larger species.

"This is the most sophisticated radar ever available for bird research," says Truitt. "This project has the potential to advance the whole science of radar ornithology." Cali-

radar project's potential. He recognizes the uniqueness of this opportunity to take the Conservancy's bird program to higher levels, both in research and on-the-ground conservation.

Truitt explains that cold fronts tend to trigger a mass exodus of songbirds, which then take advantage of prevailing tailwinds as they move along the peninsula. Shortly after sunset, when the songbirds begin to ascend, they circle around



©Daniel White

brating the radar and evaluating its effectiveness as a remote sensing tool are long-term goals that will require both time and significantly more funding.

Truitt, who already has amassed an unparalleled three decade's worth of bird research at VCR, is understandably excited about the NPOL

For years ornithologists have gathered on Virginia's Eastern Shore to view and study migratory birds as they pass through on their long journeys. Each October hundreds of dedicated wildlife watchers and bird lovers flock to the Eastern Shore Birding Festival, near Cape Charles, to take advantage of the fall migration of neotropical songbirds and raptors as they fly south to the tropics.



and around, gaining altitude before striking off toward their ultimate destinations.

"It makes for a perfect radar target," Truitt says. As signals emitted from the radar tower bounce off the birds and return to the 18-foot flat-panel antenna, computer software creates onscreen loops that show the movement in swirling patterns of vivid color. With only a little imagination, suggests Truitt, "The sky looks like a river of birds."



©Rob & Ann Simpson

In the short term, the most significant conservation impact entails researchers identifying the sites from which these flights originate. These "stopover sites" provide the critical habitat that migratory songbirds depend upon for resting and feeding before continuing their long, perilous journeys. In addition, to help validate

the radar data and determine the types of habitat beneath the birds' radar "exit signatures," several field researchers are conducting point counts and netting and banding birds at ground level. Other partners are compiling land-cover analyses of habitats.

Indeed, according to Truitt, there's a whole "alphabet soup of partners" beyond NASA who helped transform the Oyster project from an idea to reality. Major research partners in-

U.S. Geological Survey, the Norfolk Foundation, the Darden Foundation and the Mary Flagler Cary Charitable Trust.

While researchers continue to analyze the data produced to date, Truitt says, "I think we'll see the radar confirm the importance of the southern tip of the Eastern Shore, but it'll also open up whole new worlds."

The information scientists ultimately glean from the NPOL radar



©Dwight Dyke

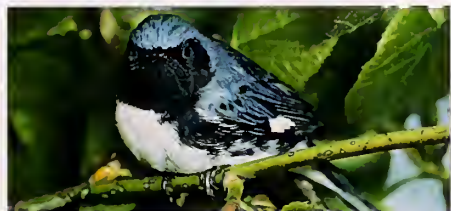
clude North Carolina State University (NCSU) and the College of William & Mary's Center for Conservation Biology, while vital funding has come from diverse public agencies and private institutions. Key funders include Virginia's Department of Game and Inland Fisheries and the Coastal Resource Management Program, the

Much of the information that will be gathered from the NPOL radar system will help identify important stopover sites that are used by the thousands of migratory birds as they rest and feed, before continuing their long journeys.

will guide much of VCR's future protection and restoration work along the Eastern Shore. "The radar project will help us make the most efficient use of our resources," says Truitt.

Reflecting back on 1992, when he first heard about radar ornithology, Truitt says, "I was up at Metompkin Inlet with Sarah Mabey," the radar research partner from NCSU. "And I said, 'we've got to get one of those for the Eastern Shore.' Now here we are in 2005, and we're all working with this super-sophisticated radar. It doesn't get any better than that."

Daniel White is a conservation writer with The Nature Conservancy's Marketing Resource Center in Charlottesville.



©Rob & Ann Simpson

VDGIF's financial support for this study has been made via the State Wildlife Grants Program. Congress established this program in 2001 to provide federal funding to address the needs of wildlife, especially those species of greatest conservation concern. Contributions from TNC and other partners have been used to meet the requirements for matching funds.



Where There's A Will, There's A Way

Local hunters host the 2nd Annual Wild Turkey Hunt for Handicapped Sportsmen.

by Tee Clarkson
photos ©Dwight Dyke

Leaving the valley behind and winding slowly to the top of Carter's Mountain Orchard,

green budding poplars quickly give way to bare limbs and the cool breeze of a lingering winter. In a week these trees will join their brethren below and this orchard will boom with the blossoms of spring. But this morning, the mountaintop is plenty alive with a different coming of spring, the opening day of turkey season.

Beside a parked ATV and the ruffled feathers of an unlucky bird, two hunters recount again the events that led to the harvesting of the turkey lying next to them. Their story begins like so many will around the state this Saturday morning with excited

words and wild eyes, yet none may be as satisfying as this.

"The birds had been making a lot of noise in the trees early but quieted down once they hit the ground," says Dennis Campbell, who volunteered his time and turkey calling expertise this morning. For two hours they heard nothing, but decided to wait it out with a few decoys and some occasional calling.

"The difference when you are hunting with handicapped people is you can't go get them, you have to bring the turkeys to you," says Dennis. At about 9:30 he hit the call again



Above: Robin Clark, Volunteer State Coordinator for Virginia Wheelin' Sportsmen, takes steady aim on his "homemade" adjustable gun rest attached to his wheelchair. Right: Hunt organizer, Charlie Durrer, (standing center) presents commemorative box calls to four guest hunters and acknowledges the 20 volunteers who assisted in the event.

and a bird gobbled not 40 yards from where he and Butch Trinca were sitting. Dennis signaled hurriedly for Butch to turn around and get in position to shoot. To hear Dennis tell it "Butch grabbed one leg and swung it over and then reached back and grabbed the other and got around in a hurry."

Then Butch takes over, "I had my gun up and I couldn't get it all the way above the blind from where I was sitting on the ground. I saw that sucker pop his head up once and then put it back down. I told myself, if he pops his head up again, I'm shootin'. Then I saw that head pop up again." He points to the half moon his shot carved out of the top of the portable blind and laughs, "Oh well."

This marks the second turkey Butch has killed in as many years of the Annual Wild Turkey Hunt for Handicapped Sportsmen sponsored by the Central Virginia Chapter of the NWTF (National Wild Turkey Federation). On this opening morning, 20 volunteers donated their time so that four handicapped hunters, John Francis "Butch" Trinca Jr., Robin Clark, Glen Smith, and Faron Shifflett could enjoy this opening day in the field.

The Virginia Department of Game and Inland Fisheries is another partner helping sponsor special hunting events like this and a supporting member of the NWTF. David Coffman, the Department's Sportsman's Education Coordinator and sponsor member of the Central Virginia Chapter, noted that the real success of these special hunts is bringing together local landowners, volunteer conservation organizations and the Department to promote conservation and stewardship management of our natural resources. Coffman believes that by getting people involved in

outdoor activities, they better appreciate the wonders of nature. And that ultimately leads to wise use of our woods, streams and wildlife. The landowners of this working farm and orchard use special hunts throughout the year to help control the deer and turkey populations, so the fruit trees and vineyards are not damaged. It's a win-win situation for all involved. The landowner utilizes controlled hunting for effective wildlife management. It is also a way to safely control hunting activities without disturbing neighbors. One of the biggest benefits is that sportsmen and women gain quality, hunting opportunities in exchange. These events enhance the dedication of all the participants and benefit the community at large. In partnership with hunters and fishermen, the Department offers numerous skill workshops and events for youth, women and novice sportsmen so they get the most enjoyment from their outdoor experiences.

The volunteers from the Central Virginia Chapter of the NWTF and the tireless efforts of Charlie Durrer (Central Virginia Wheelin' Coordinator) and Robin Clark (State Coordinator for Wheelin' Sportsmen) make this happen.

Two years ago Robin and Charlie got to talking about doing a turkey hunt. When Robin was skeptical at first that it could work, Charlie made the comment, "We'll never know if we don't try." Try they did. Last year they had the same amount of





hunters, but only four volunteers compared to the 20 they have this year. Three years ago on their first Wheelin' Sportsman deer hunt they only had four volunteers. Through their efforts there will be four turkey hunts around the state for handicapped hunters this year.

"None of these hunts would be possible without the volunteers," says Charlie Durrer, "Hunting with a handicapped person is a team effort." For every handicapped hunter this morning there are three volunteers from the Central Chapter of the NWTF. Local businesses such as Piedmont Equipment Company, Holiday Inn Monticello, and Korner Restaurant donate their equipment and services. The Department of Game and Inland Fisheries prepares packages for hunters, provides volunteer safety instructors and game wardens, and has arranged several hunts on property managed by the Virginia Department of Forestry. All of this equates to the ultimate goal of Wheelin' Sportsmen: getting more handicapped hunters out in the woods.

For most of the volunteers this hunt marks the pinnacle of their hunting season. Chad Graham and Neil Gooch, two first time volunteers, hunted with Robin Clark this morning. They heard some turkeys gobble, but did not harvest a bird. Before lunch is served the three hunters have already made plans for another hunt the following week. When asked about the morning, Chad says, "The experience was awesome. It really makes you realize how much we



Participants in last year's event were treated to a great day of spring turkey hunting along with the opportunity to make some new friends and to share some great hunting stories. Left: Volunteer "guide," Gary Bickers (kneeling right) lures a wary gobbler within range for Glen Smith, while "wrangler," Anthony Capps waits to capture memories on film as part of a three person hunting team. Right: Butch Trinca, who successfully harvested a fine gobbler, also took advantage of the new game checking system by calling 1-800-GOT-GAME on his cell phone.

take for granted. I'm glad I had the opportunity to be a part of it. It was a beautiful spring morning." This is the sort of thing you hear from all the volunteers at the event, and Robin will tell you that the volunteers usually have more fun than the hunters.

The participants for this event are chosen by a drawing. Twelve hunters put their name in for the draw and four were chosen. Neil is already talking with Robin about organizing more volunteers so that every handicapped hunter in the area that wants to go turkey hunting has the opportunity.

There are roughly 145 members of the Virginia Chapter of Wheelin' Sportsmen, a national outreach program of the NWTF organization. Their chief goal is to provide handicapped hunters the opportunity to get out in the woods. Robin Clark has been involved with Wheelin' Sportsmen for five years now. Two years ago, when Robin Clark took over as the state coordinator for Wheelin' Sportsmen there were two hunts for handicapped sportsman in Virginia. This year there will be 14 hunts around the state. His main goal is to increase events and give more people, who are handicapped, the opportunity to get out in the woods.



2005 Fall Hunts

New Kent Forestry Center Muzzle-loader Deer Hunt – Providence Forge – November 4-5, 2005. We are proud to partner with the Virginia Department of Forestry for this first-time hunt. We'll meet for dinner at the Forestry Center on Nov. 4th, and return early the next morning for a promising hunt. Their Conference Center will be completed and lodging will be offered on-site.

Great Outdoor Ministries Shotgun Deer Hunt – Botetourt County – November 18-19, 2005. The hunt will take place on opening day of the general firearms season, and will involve women, youth and handicapped hunters. We'll gather at Camp Bethel on Friday evening for a dinner meeting. Lodging will be provided.

J.E. Taylor Hunt Club Rifle Deer Hunt – Orange – December 3, 2005. Get ready for our first-time deer hunt on 7000 acres of trophy-managed property. Taylor Hunt Club has one of the best management programs in the state with rigid antler restrictions. They've invited us out but have lifted their antler restrictions! But take my advice, please be patient, as there are truly some monster whitetails there; and they have pictures to prove it!

Valley Eng. Surveying & Planning W.Va. Deer Hunt – near Bergton – December 3, 2005. Daniel Michael of V.E.S.P. will once again open up his 1200 acre hunting lease to Virginia Wheelin' Sportsmen. This will be our third trip up to this breathtaking mountaintop property loaded with game. If you want a true backwoods hunting experience with 15 mile views in every direction, then this is your hunt!

Chancellor Hunt Club Rifle Deer and Bear Hunt – Richardsville – December 10, 2005. Here is another first-time hunt on 1100 acres of prime white-oak-filled deer woods. This club heard about our program last fall and has graciously opened up their bow-only club to us for a rifle hunt. They have bears on the property and they'll be fair game also. Piedmont Area Chapter NWTF will host this event.

Twin River Strutters NWTF Deer Hunt – Tappahannock – December 14, 2005. Are you ready to sneak away during the week and get some good shotgun-only deer hunting in? Then this is your chance! Usually our hunts take place on the weekends. We're trying something new, as we'll go mid-week with a Wednesday deer hunt. The swamps of this area are loaded with whitetails, and we'll get help moving them around from some quality deer dogs. This will be an exciting hunt!

Gray Ghost Gobblers NWTF Deer Hunt – Fauquier County. – DATE TO BE ANNOUNCED. Last year we batted almost .500 on the deer, and also missed some shots! Please plan to join us for this rifle deer hunt on 500 beautiful acres of Northern Virginia farmland. We'll post more information as it becomes available.

Halifax Chapter NWTF Deer Hunt – South Boston – DATE TO BE ANNOUNCED. We've ventured to southern Virginia for this hunt three years running, and have a great time every year. We've taken some good bucks off of this 1500 acre estate, and we've been skunked. But either way, a fun-filled day is guaranteed. We'll post more information as it becomes available.

Henry County Longbeards NWTF Deer Hunt – Henry County – DATE TO BE ANNOUNCED. Another first-time hunt down south near Martinsville. The chapter says they're all set to put us on some quality deer with a great day of rifle hunting, and good food. We'll post more information as it becomes available.

Late Season Waterfowl Hunt – Madison or Essex County – DATE TO BE ANNOUNCED. Two hunters will be selected for this all-day goose, duck and tundra swan hunt (must be drawn and pending VDGIF '05 game laws). Frank Wade with Waterfowl USA will be our guide and caller. This hunt is sponsored by Shenandoah Stone.

For more information contact Robin Clark at (434) 979-6154 or visit the Wheelin' Sportsmen Web site www.vanwtf.com.



Left to Right: Glen Smith, Faron Shifflett, Robin Clark and Butch Trinca share their experiences and lessons learned during the special gobble hunt hosted by volunteers.

Robin, who's 48, was injured in a diving accident when he was 16 and has been in a wheelchair ever since. He hunted before his accident, but didn't hunt for 10 years after because there wasn't any equipment. Finally, a friend lightened the trigger on his rifle so he could shoot with some accuracy, and he was able to get back in the woods.

"Youth and the recently injured are oftentimes hesitant to get out and hunt," Robin says, "Wheelin' provides confidence for these people to get out there on their own." He hopes in the future to be able to dedicate more time to developing the specialized equipment needed in order for many handicapped hunters to get out in the woods.

By noon the morning's cool breeze has surrendered to the warming sun and an unmistakable air of enthusiasm wafts among the hunters atop Carter Mountain.

All have returned from the field and wait in line for Salisbury steaks, gravy, mashed potatoes and green beans, provided by more volunteers. The world seems small, laid out in the valley below. Cars speed by Charlottesville on the highway, in a hurry

to get somewhere. Butch cackles in the background, aiming down an imaginary shotgun, telling the story of the morning's hunt to his buddy Glen Smith. Leaning against the railing, Gary Bickers, one of the original four volunteers from three years ago says, "This is the ultimate." Who could argue with that? □

Tee Clarkson spent six years as a fly fishing guide on the Green River in Utah before becoming a high school English teacher. He currently teaches at Deep Run High School in Henrico County.

The Virginia Wheelin' Sportsmen lost a dear friend and supporter, with the passing of Butch Trinca as this article was going to press. We will always remember his laughter, energy and his never-ending zest to enjoy life to the fullest. He will be deeply missed by us all. To honor the memory of this admired fellow sportsman, the Central Virginia Chapter of the National Wild Turkey Federation will name the annual spring gobble hunt on Carter's Mountain for handicapped sportsmen, The Butch Trinca Memorial Gobbler Hunt.

Wheelin' Sportsmen is always looking for participants, who are handicapped, and for people to volunteer time and the use of their land so that more handicapped hunters have the opportunity to get out in the woods. For more information contact: Robin Clark: weeeelz@aol.com (434) 979-6154 or (434) 249-6154 Charlie Durrer: cdurrer4@earthlink.net Or visit: www.vanwtf.com




Seed Journeys

by Carol A. Heiser
illustrations by Spike Knuth

"Though I do not believe a plant will spring up where no seed has been, I have great faith in a seed. Convince me that you have a seed there, and I am prepared to expect wonders."

—Henry David Thoreau,
Faith in a Seed.



Gardeners don't need too much convincing that if "you have a seed there," by golly it will grow. When a plant springs up in a place where we didn't expect it, we indignantly call it a 'weed.' Too bad we scarcely give a thought to the eons of natural selection that have enabled plants to spread their seeds or fruits so efficiently, or that have allowed seeds to remain viable yet dormant in the soil for extended periods of time, waiting for the right conditions to germinate. Seeds are micro-cosmic treasure troves that represent the future success of entire species, and plants have an incredible number of unusual strategies for spreading these genetic 'blueprints' around. Dispersal strategies might include wind, water, fire or 'ballistics', but the most effective means of seed dispersal is by wildlife.

As these cedar waxwings feed on wild berries many of the seeds will find their way to the ground, germinate and eventually will spring up as new plants.

Blowin' in the Wind and Riding Waves

Why so many strategies? Competition is the name of the game, and seed dispersal directly affects plant distribution. If seeds aren't dispersed far enough away from the parent plant (or far enough away from other plants in the same community), fierce competition for water and resources may ensue. Some seeds are, therefore, lightweight or otherwise aerodynamically efficient in order to float or spin away on the wind, like the downy or "plumose" parachutes of dandelion, cattail and thistle seeds or the "helicopter" wings of tulip poplar, elm and maple seeds, called samaras. Sycamore fruits are composites that break up into hundreds of airborne seeds. Other plants have seed pods which rupture to release their contents en masse as they sway in the wind, such as milkweeds and dogbanes.

However, these wind-driven seeds, called "wind ballistics," are randomly distributed helter-skelter and are at the unpredictable mercy of the direction or strength of the wind on any given day. We, therefore, tend to see this type of dispersal more common in herbaceous plants of open habitats, such as early successional fields, where the wind delivers its maximum effect. Sometimes the force of raindrops helps disperse these

seeds, too, and the seeds are referred to as "rain ballistics."

Many aquatic plants produce fruit or seeds designed to be buoyant in water, such as cranberries that grow in peaty bogs, or water lilies and lotuses adrift in wetlands. Their seeds depend on water movement and flooding to carry them to new environs, in the same way that coconuts bob about on tropical ocean currents as they journey to other shores.

Seed Hikers

Heavier seeds or fruits, on the other hand, like acorns or persimmons which contain many more nutrients for survival but cannot drift on the wind or are unlikely to be dispersed by water, rely on animals for transport instead and are often dropped or placed in more strategic or suitable sites for germination. According to one source, more than 60 percent of tree species in our deciduous forests are spread by vertebrates such as mammals and birds.

Seeds dispersed by wildlife take a hike in one of three ways: they either get eaten, get attached to an animal's body, or are carried away to be stored for a later meal.

Fruit-eaters might include birds, mammals and reptiles, with birds being the most common



A. Tick trefoil; B. sugar maple;
C. avens; D. burr marigold and
E. milkweed pods disperse their
seeds with the help of the wind.



candidates. Interestingly, many plant species time their fruit-ripening in the fall to correspond with the onslaught of seasonal bird migration. More than 70 percent of plants whose seeds are dispersed by birds fall into this category, and the plants have developed a survival strategy to produce fruits with a high lipid (fat) content. The classic example of this phenomenon is the relationship between certain berry- or fruit-bearing plants and flocks of cedar waxwings. The hungry waxwings descend in large congregations on dogwoods, hollies, cherries, cedars and viburnums, attracted to the bright red or dark blue fruit of laden branches. The birds gobble up just about every last berry on each plant before they move on to the next tree or shrub. In this way the birds stock up on fat energy that will help them travel thousands of miles, and the plants reap the benefit of being "planted" elsewhere in the birds' droppings.

Fruit which travels this way in an animal's intestines is not only adapted to survive the harsh conditions of digestion but actually requires the digestive enzymes to soften or break the protective outer layer or coating in order to release the seeds within. An added bonus of this 'scarification' process is the nutrient-rich organic matter which accompanies the seeds as the animal



voids its droppings or scat: free fertilizer, as it were, to help boost germination. Raccoons, bear and deer in our neck of the woods, as well as bats and primates on other continents, all do their part to spread seeds passively by ingesting fruit. Even box turtles play a role in the dispersal of woodland plants, such as mayapple. Plants have made the most of their relationship by producing fruits which appeal to wildlife because of color, scent or taste.

Paying Homage to Mice and Ants

Nutritional rewards form the backbone of "mutualism" between plants and animals. The reward might be sugar, starch or water in the pulp of a fleshy fruit like blackberry, or fatty deposits called 'eliasomes' on the outer coating of the seeds of bloodroot, violets and sedges. Wildlife attracted to these fruits tend to hoard their food in a cache for future use or bury the seeds in the ground, invariably leaving a percentage of seeds to rot or germinate, as the case may

be. For example, mice 'scatterhoard' seeds in numerous small caches, while squirrels and chipmunks 'larderhoard' larger supplies.

Some studies have shown that the seeds of as many as 30 percent of spring-blooming wildflowers in our deciduous forests are dispersed by ants, including wild ginger, trilliums, trout lily, spring beauty, squirrel corn and Dutchman's breeches. Referred to as 'myrmecochory,' ants forage for these seeds and return with them to their nests to larderhoard. Some ant species bury seeds shallowly near the entrance to their nest, while harvester ants build an extensive granary deep within the ground. Some ecologists believe that seed germination is either stimulated or facilitated when ants remove the eliasomes to feed themselves or their larvae. The ants' industry also benefits cultivated flowers such as daffodils, pansies and grape hyacinths.

By Hook or Crook

Still other birds and mammals unwittingly carry seeds on their feathers, feet or fur as they ramble, tramp and slog about their daily routines.

The mechanisms which determine how a seed or fruit will be dispersed on an animal's body are largely dependent on the overall geometry of the seed's structure. Packaging is everything. Beggar-ticks, burdocks and bedstraw spread seeds that are covered with hooks, barbs or otherwise sticky surfaces which conveniently attach to passers-by. The tenacity of such seeds compelled hikers to coin the now familiar cliché, "nature's Velcro."

Physics sometimes drives function, too, as in the propulsion of seeds from a jewelweed or 'touch-me-not' pod. These fruiting bodies are shaped in a unique spring-loaded design. When the fruit is ripe, all it takes is a gust of wind or an animal to walk by and "pop" the fruit open. The energy released from the pop is enough to jettison the seeds several feet away.



Left: Rabbits and other animals will often carry seeds on their fur from one location to another. Right: Ants play an important roll by dispersing and burying million of seeds.

Coming to Terms... with Seeds

Fruit: the ripened ovary of a flower, containing seeds.

Seed: the matured ovule of a flowering plant, containing usually one embryo, plus food reserves, surrounded by a seed coat.

Berry: a many-seeded, succulent fruit. An outer skin encloses a thick fleshy interior with an inner thin layer.

Capsule: a dry fruit which doesn't explode.

Nut: a fairly large, hard, dry, one-seeded fruit which does not explode.

[Source: *Officell Woodland & Wildlife Trust*, www.countrysideinfo.co.uk/seed_dispersal/index. This site contains excellent information, pictures and puzzles suitable for classroom instruction.]

Did You Know?

There are two main groups (phyla) of plants which have distinct ways of producing seeds: the *gymnosperms* and the *angiosperms*. The term

'gymnosperm' literally means 'naked seed' and refers to plants that do not have fruits or flowers but that spread their seeds by cones. This group arose during the Paleozoic Era (between 245 and 570 million years ago) and is much older than angiosperms. The gymnosperms include conifers (such as pine, spruce and fir), cycads (palms in the tropics), and ginkgos. These plants produce separate male and female cones; it's the male cones that produce the abundance of pollen grains which some of us have come to associate with the misery of spring allergies. Only female cones contain the actual seeds.

'Angiosperms' are all the other flowering plants which arose from the gymnosperms, much later in the grand scheme of things (110 million years ago). The root of the word, 'angio,' means 'hidden' and refers to the fact that seeds are enclosed within some type of fruit structure.

Learning More

"Blowing in the Wind: Seeds and Fruits Dispersed by Wind," and "Drift Seeds and Drift Fruits: Seeds that Ride the Ocean Currents," chapters in the non-profit *Wayne's Word: an Online Textbook of Natural History*, at

Above: Whether by a young child blowing on the seeds of a dandelion or by birds and mammals, like this squirrel (below) looking for a place to bury a nut, the journey of seeds is one of amazement.

<http://waynesword.palomar.edu> (type the keywords 'seed dispersal' in the Search feature).

Faith in a Seed: the Dispersion of Seeds and Other Late Natural History Writings, by Henry David Thoreau; c. 1993, Island Press, Washington, D.C.; 301 pages.

The New England Wildflower Society Guide to Growing and Propagating Wildflowers of the United States and Canada, by William Cullina; c. 2000, Houghton-Mifflin Co.; 322 pages. Contains information on how to harvest and propagate plants by seed, divisions or cuttings. □

Carol A. Heiser is a Wildlife Habitat Education Coordinator with the Department of Game and Inland Fisheries.

Virginia
Naturally



So, What's For Dinner?

Part I: What Virginia's deer are eating come October.

by Bruce Ingram

Different Virginia sportsmen experience different pleasures when it comes to the reason why they deer hunt. The reason one of my good friends pursues deer is that he enjoys working up different loads for various cartridges. Another buddy relishes the challenge of shooting very small groups in preparation for the various gun seasons. Yet another pal is consumed by the test of dueling with big bucks. While another doesn't really care if he kills a deer or not, he just likes "being out there."

For me, the biggest thrill is attempting to deduce what whitetails are consuming during the early bow season in October. I find the subject both endlessly fascinating and demanding. In Part I, we will examine the major and minor whitetail menu items in October. Next month in Part II, we'll explore fall turkey foods.



The fruit of a persimmon tree is a favorite food of many game animals and a magnet for deer.

©Bill Lea



©Bill Lea

White oak acorns.



©Bill Lea

Southern red oak acorns.

Discriminating Between White and Red Oaks.

Generally, white oaks feature leaves that have rounded lobes and that lack bristle tips. The barks of most white oaks are light, and the acorns of all of them take one year to mature. The acorns are relatively sweet and are edible for humans. The chestnut oak is a notable exception in that its acorns are bitter to the taste and have wavy-edged lobes.

Acorns of red oaks are yellow, bitter and inedible for humans. The leaf lobes have bristle-tips and acorns require two years to mature, so that on any given tree both first and second year acorns are present. For many red oaks, the bark is quite dark. I also find the individual leaves of red oak trees more variable and harder to distinguish. For example, the leaves of scarlet and pin oaks are very similar in appearance as both have deeply lobed leaves. One clue to identification is that the pin oak prefers moister habitat.

Dave Steffen, research biologist supervisor for the Virginia Department of Game and Inland Fisheries (VDGIF), says that when the American chestnut disappeared from the state's forests several generations ago, the oak family filled the void and has since increased in abundance and importance. And come the beginning of bow season, one member of that family influences deer movement in the Old Dominion, especially in the state's wooded areas, more than any other food source.

"Virginia deer definitely prefer white oak acorns over those of any other oak species," says Steffen. "The Native Americans even ground white oak acorns into food because of their low tannin content and palatability. Deer apparently recognize that lower tannin content as well."

This past bow season, I spent the three weekends before the opener searching for white oak trees that were dropping their nuts. On land I own on Potts Mountain in Craig County, I located one white oak that truly had engendered thousands of acorns. Adding to the appeal was that the massive tree grows along a logging road between two clear cuts on the mountainside. And a hollow funnels deer directly up the mountain to that tree. With the natural funnel created by the terrain and the man-made funnels created by the clearcuts and logging road all leading to a white oak that was producing its bounty, I had indeed found the perfect stand site. Mounds of deer droppings under the oak only confirmed that fact.

On opening day, I was in the stand well before dawn and around 9:00 a.m. as I had anticipated; I saw three deer on their way to my stand. When they came to within about 40 yards of the white oak, the wind apparently shifted, the trio detected my scent, snorted and departed. Nevertheless, the power of white oaks to entice whitetails was proven once again.

But in many years, Virginia's white oaks don't bear, as this species is a notoriously fickle producer of nuts. Should state archers turn to other members of the white oak fami-

ly or perhaps to certain members of the red oak clan?

"Nobody has been able to determine if deer prefer certain members of the red oak family, say northern red oaks over black oaks for example," says Steffen. "I suspect that deer prefer the species of red oak that is dropping its acorns at the moment and nothing more. All of the red oak acorns have fairly high tannin content and a bitter taste, at least to humans."

With that fact in mind and the probability that many places where I hunt in Botetourt, Craig, Franklin and Bedford counties will see their white oaks fail to produce many acorns in any given year, I always try to locate red oak groves where the trees have spread forth their fruits. For instance last September during my scouting forays, I found a Botetourt County woodlot where the northern red, scarlet and black oaks all were shedding their acorns. I then located a heavily used trail leading down from a mountain laurel bedding area to the red oak stand. On the first Tuesday of archery season, around 5:40 p.m., I killed a mature doe that was ambling along that trail on her way to scarf down those red oak acorns.

The next question that arises is should Commonwealth bowhunters

seek out the various state red oak species (besides the northern red, scarlet and black oaks, Virginia also has blackjack, turkey and pin oaks among others) over the other white oak species such as chestnut, chinquapin and post?

"That's a good question," says Steffen. "I can say that the chestnut oak acorns always seem to be the last ones to be eaten and are often still on the ground in December and January. A host of factors could determine whether deer would favor visiting a post oak tree over a red oak grove."

My experience is that the deer are opportunistic foragers on post and chinquapin oak acorns. For example, on the 29 acres my family and I live on in Botetourt County, a lone chinquapin oak tree grows in a hollow. Every other year or so that tree drops its nuts in great profusion and for the week to ten days when those acorns are on the ground, every deer moving through that hollow makes a detour to visit the chinquapin—regardless of whether the other white and red oaks have produced nuts or not. The discarded acorn shells and caps litter the ground beneath this white oak family member.

But when the chinquapin acorns have been consumed, the deer never venture near the tree again and revert to their former travel patterns. I have witnessed this same tendency of deer to visit post oaks, which often grow singly in Virginia, for a brief period, consume the nuts and then move on to the next food source. Which leads us to a very valuable point.

When Virginia bowhunters have positioned their stands in order to take advantage of a very specific deer food source, we should move our stands the first day we observe that the deer don't appear. Don't waste time hoping that the deer will make "one last visit" to a barren white or red oak. The whitetails have moved on—and so should we.

The red oak is a major food source for deer, although they tend to prefer white oak over other acorns. Right: During pre-season scouting the author's wife Elaine came across red oak acorns.



Apple trees offer a sweet treat for deer.

Tree Identification Books.

Some 20 years ago, I purchased two books that I rely on a great deal for helping me with tree identification. They are *The Audubon Society Field Guide to North American Trees: Eastern Region* and *A Field Guide to Trees and Shrubs*, which is part of the Peterson Field Guide Series and is by George Petrides. Both books feature plenty of illustrations and helpful tree, bark, leaf and fruit/nut identification tips, as well as range information. Dave Steffen recommends *Old Forest Ecosystems: Ecology and Management for Wildlife*, published through the John Hopkins University Press and the Smithsonian Press and edited by William McShea and William Healey. The Virginia biologist contributed a chapter to the text.



©Bill Lea



©Bruce Ingram



©Bill Lea

Some years in Virginia, the white oaks don't bear at all and the red oak crops have been mostly consumed by mid- to late-October. What should an archer do then?

"Deer sightings, and the deer harvest in Virginia, typically rise when the acorn crop is gone," says Steffen. "The deer harvest, especially the harvest of does, is really driven by the presence or absence of acorns. Those years of poor mast production are the ones when we (VDGIF) receive reports that the deer are everywhere. On the other hand during years of high mast production, we receive reports from people concerned that the deer have all disappeared. The deer aren't gone, they are just in the woods feeding on acorns."

During years of acorn scarcity, state archers should position their stands along trails leading to a pasture, orchard, corn or soybean field, or some other type of agricultural area or opening. For instance, several years ago on my Potts Mountain land, during pre-season scouting I ascertained that not a single red or white oak tree had set any acorns. But on one small section of the property, several 70-year-old-plus apple trees were still clinging to life and producing fruit. At 8:36 a.m. on opening day, I arrowed a plump doe that had come to feed on the fallen apples. Frankly, I was surprised that I had to wait 90 minutes before a deer showed that

morning—so sure I was of the apple pattern.

Old Dominion whitetails will also consume a large variety of soft mast menu items. Steffen lists persimmons as a real favorite of this big game animal, and I have noted whitetails meandering along fencerows to partake of persimmons. Several Octobers ago, heavy winds swept through a Bedford County woodlot where I have permission to hunt, and the broken branches of black gum, also known as sour gum, littered the ground. For a few days, the deer took advantage of this windfall, eagerly consuming the bitter (at least to human taste) bluish berries.

Although they are certainly not major forage items of whitetails, grapes and dogwood berries, continues Steffen, can certainly be targets of opportunity. A bowhunter once told me that he killed an 8 pointer that was standing on its hind legs while feeding on grapes in a copse. As my friend was field dressing the buck, he noted that the whitetail's chin was stained purple from the grape juice that had trickled down.

Virginia's deer will also browse on a wide variety of foods. Steffen describes honeysuckle as "a huge deer food." During years of poor hard and soft mast production, I like to place a stand along a field edge where honeysuckle thrives. Honeysuckle is especially a magnet during the late

archery and muzzleloader seasons, but it can produce during the October period as well.

"Members of the smilax genus, that is the greenbriers, are also favorites of deer," continues the biologist. "Deer don't like the coarse part of the plant or the thorns, but they will nip off the tender tips and the new growth. Anywhere in the state where there are any kind of deer numbers at all, hunters will be able to see where the deer have browsed on greenbrier. Other important browse items are species of Rubus, for example, blackberry and dewberry.

"Deer are resourceful. They will even eat the needles of red cedars and the bark of various trees and shrubs if they have to. But the bottom line is this, if a bowhunter can establish the deer feeding patterns he can be successful. And in years when the state has a good acorn crop, the deer will be heavier and in better condition. Deer are what they eat." □

Bruce Ingram is the author of three books: The James River Guide, The New River Guide and The Shenandoah/Rappahannock Rivers Guide. For more information, contact Ingram at be_ingram@juno.com or Ecopress (800-326-9272) or www.ecopress.com.

Note: Look for "Part II: What Virginia's Turkeys Are Eating" in the November issue of Virginia Wildlife.

VIRGINIA WILDLIFE OUTDOOR CATALOG



photos by Dwight Dyke



Fleece Knee Blankets

These rollup blankets are 100% polyester and measure 50" x 60". Each has our *Virginia Wildlife* logo. Great to curl up with in the old rocking chair or keep one in the car. Available in Red, Grey and Black.

Item #VW-132 \$19.95 each



2005 Limited Edition *Virginia Wildlife* Collector's Knife

This year's knife has been customized for us by Buck Knives and has a cut out blade of a hunter and his dog. Each knife is individually serial numbered and comes with a distinctive rosewood handle and gold lettering. This custom knife comes in a decorative solid cherry box with a hunting scene engraved on the cover.

Item #VW-405

\$75.00 each



Sheath Knife

This attractive and functional knife has walnut handles with a 3½-inch blade and is approximately 8 inches overall. Made for us by Bear Cutlery, each knife is engraved with *Virginia Wildlife* on the blade and comes with a leather sheath.

Item #VW-404

\$29.95



2004 Limited Edition *Virginia Wildlife* Collector's Knife

This knife has been custom made for us by Buck Knives. Every facet of this knife indicates that it will be a treasured collectable. From its distinctive handle with gold lettering and brass bolsters to the knife blade engraved with the Department's logo, each knife is individually serial numbered and comes in a decorative, custom wood box with a waterfowl scene engraved on the cover. Limited quantities still available.

Item #VW-403

\$85.00 each



New Collectable Five Piece Coaster Set

Made of solid cherry, this attractive set of 4 wooden coasters is packaged in a wooden box. The box and each coaster have been custom engraved with a deer image.

Item #VW-521

\$20.95



VW-503

VW-502

Buckles

Our bass and duck belt buckle collection is crafted of solid pewter with *Virginia Wildlife* engraved at the bottom. Each buckle comes in a custom gift box with the VDGIF distinctive logo displayed.

Item #VW-502 Bass VW-503 Duck \$9.95 each



VW-500

VW-501

Limited Edition Collector's Plate

The first in a series of *Virginia Wildlife* limited edition collector's plates. This collectable is titled "Winter Comfort" and is taken from an original artwork by Bob Henley. Each plate is individually serial numbered and has the year of issue on the back.

Item #VW-500

\$ 22.95

Limited Edition Steins

The first in a series of *Virginia Wildlife* limited edition steins. This companion piece to our collector's plate shown above is also individually serial numbered and has the year of issue on the back.

Item #VW-501

\$16.95

Virginia Wildlife Music CD

Virginia Wildlife is excited to offer a compelling and lively array of classic Celtic and Appalachian music that celebrates Virginia's wildlife and natural resources. This musical journey is composed and performed by Timothy Seaman, of Williamsburg, Va., along with guest appearances from other musical masters. (Total time 66:32 min.)

Item #VW-219

\$10.00 each



VW-518

Bear With Fish

Our bear has caught his fish and is not about to let it get away. This collectable bear is approximately 12 inches high.

Item #VW-518

\$9.95 each

Duck With Baby

This colorful collectable duck and duckling is available in limited quantities.

Item #VW-519

\$9.95 each.



VW-519

Virginia Wildlife Collection of Throws



VW-509



VW-511



VW-507



VW-513



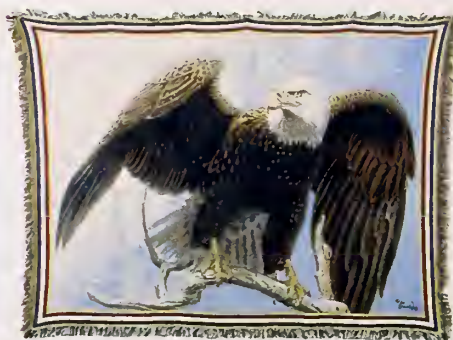
VW-514



VW-520



VW-515



VW-516

Each throw is approximately 52" X 69" and is triple jacquard woven of 100% cotton. Machine washable. \$39.95 each
Please specify:

Winter Songbirds	Item #VW-507
Down From The North	Item #VW-509
Fall Buck Throw	Item #VW-511
Bend in the Road	Item #VW-513
River Ducks	Item #VW-514
Gallant Tribe	Item #VW-515
The Perch	Item #VW-516
Waiting at Crow Creek	Item #VW-520



Book Clock

This decorative book-style clock is crafted of solid cherry wood, beautifully engraved with a vivid wildlife scene on the book side of the clock. The clock face is of Old World décor, a collector's delight. Clock is 5 1/2" X 8 1/2" when opened.

Item #VW-303

\$29.95 each



Mouse Pad / Coffee Cup Set

It will be hard not to stare at this lifelike picture of a fawn as you sit at your computer and drink your favorite beverage.

Item #VW-223

\$14.95

For the Art Lover or Collector



VW-222 Fawn



VW-222 Blue Birds



VW-211 Cardinal



VW-211 Turkey



VW-222 Ponies



VW-222 Female Cardinal



VW-211 Deer



VW-211 Grouse

New in 2005, Four New *Virginia* *Wildlife* Prints

Each 16" x 20" print is custom framed and has been selected from award winning photographs or original artwork.

Item #VW-222

\$35.95 each

Please specify:

Blue Birds – original artwork by Spike Knuth

Ponies – award winning photo by Clarissa Hull

Fawn – award winning photo by Ruimin Wang

Female Cardinal – award winning photo by Douglas Graham

Framed Prints of Our "Winter in Virginia" Original Paintings.

Each print is custom framed and matted. These attractive prints will brighten any room and are available for a limited time.

Item #VW-211

\$35.95 each

Please specify: Cardinal, Turkey, Deer or Grouse

2005 Limited Edition Collector's Plate

Our second in a series of *Virginia Wildlife* limited edition collector's plates. This collectable is titled "Cardinal in the Pines" and was taken from an award winning photo by Douglas Graham. Each plate is individually serial numbered and has the year of issue identified on the back.

Item #VW-522

\$22.95

Limited Edition Steins

Our second in a series of *Virginia Wildlife* limited edition steins. This companion piece to our Collector's Plate shown above is also individually serial numbered and has the year of issue identified on the reverse side.

Item #VW-523

\$16.95





©Dwight Dyke

Our Virginia Wildlife collection of Pulsar Watches by Seiko

Your choice \$59.00 each or 2 for \$100.00



From the Ladies Pulsar collection. This attractive watch has a gold tone bracelet with gold tone hands and markers on a champagne dial. Water resistant.

Item #VW-302



From the Pulsar Nightfall Line. TiCN plating, gold tone crown, hands and markers and black dial. Water resistant.

Item #VW-301



Man's Wrist Watch
Stainless steel bracelet, luminous hands and markers, and blue sunburst dial. One way rotating elapsed timing bezel. Water resistant.

Item #VW-300



VW-134

VW-133



Introducing Our New Virginia Wildlife Knit Caps

Each cap is made of 100% cotton. \$11.95 each

Item #VW-133 Orange with Deer

Item #VW-134 Light Grey with Eagle

NEW Virginia Wildlife Hooded Sweat Shirts

These attractive shirts are a 50/50 cotton polyester blend with an embroidered logo and a full zipper front. Sizes : Med., Large, X-Large and XX-Large.

\$21.95 each

Item #VW-127 Black w/Eagle

Item #VW-128 Navy w/Duck

Item #VW-129 Grey w/Deer



Fleece Vests

New to our product line for 2005 these attractive vests are 100% polyester and carry the Virginia Wildlife logo. Available in Red, Black, and Grey. Sizes: Med., Large, X-Large and XX-Large.

Item #VW-131

\$24.95

NEW Outdoor Zipper-Front Vest

For the outdoorsperson it comes with a mesh lining and has 5 pockets. Natural color with a Trout embroidered above the pocket. Available in Sizes: Med., Large, X-Large and XX-Large.

Item #VW-130 \$45.95





Virginia Wildlife T-Shirts

T-Shirt with eagle, available in Black, Navy and Teal

Item #VW-100 \$12.95 each



= VW-103



= VW-104

Each shirt is 100% cotton and embroidered with the *Virginia Wildlife* logo and a largemouth bass or white-tailed deer. When ordering please specify size (Med., Large, X-Large or XX-Large) and color (Grey, Navy, Tan, Teal or Black). \$12.95 each

Item #VW-103 Largemouth Bass

Item #VW-104 White-tailed Deer



= VW-109

= VW-110

= VW-111

Denim Shirts

100% cotton, pre-washed, long-sleeved denim shirts with embroidered logo. Available in sizes Med., Large, X-Large and XX-Large.

Item #VW-109 Cardinal

Item #VW-110 Eagle

Item #VW-111 Trout

The price listed in the September 2005 issue of *Virginia Wildlife* was incorrect. The actual price is \$19.95 each.

= VW-107



= VW-106

= VW-108

= VW-105



= VW-105

Virginia Wildlife Sweat Shirts

These attractive shirts are a 50/50 cotton polyester blend, with an embroidered logo. Available in sizes Med., Large, X-Large and XX-Large. Please specify size, color and logo. \$17.95 each

Eagle in Black, Navy and Khaki -Item #VW-105

Trout in Grey, Navy and Khaki -Item #VW-106

Deer in Black, Grey and Khaki -Item #VW-107

Cardinal in Black, Navy and Rose -Item #VW-108

ZIP



Journal

2005 Outdoor Calendar of Events

October 15, 2005: *Fishing Workshop* at Amelia Lake on the Amelia WMA. Contact Angling Education Coordinator at 804-367-6778 or chris.dunnivant@dgif.virginia.gov.

October 7-9, 2005: *Eastern Shore Birding Festival*. For more information call (757) 787-2460 or visit www.esvachamber.org/festivals/birding.

December 3, 2005: *Generation Deer Hunting Workshop for Youth* at Occoquan Bay Wildlife Refuge. Contact Lt. Dodson at 540-899-4169. □



Tracks in the Snow

by Jennifer Worrell

Officer Mike Hull, of Nelson County, loves to use visual tracking as evidence in poaching cases—he also realizes the importance of giving perpetrators time to think about their misdeeds! One illegal hunter mistakenly left his footprints where Hull could find them and spent a sleepless night because of it.

A witness gave Hull a tip that he had seen a local farmer harvest some deer during the closed season. When the warden investigated the information, he found some good tracks in the snow where the deer had obviously been loaded into the vehicle. Hull also saw fresh blood on some hay next to the hunter's driveway.

Hull returned to the property to confront the farmer with the evidence later that evening. The man had been drinking and denied the allegations. The officer asked the man

to accompany him back to the scene of the hunt. Hull had the hunter put his boots in the tracks he had found earlier. Naturally, the officer had found a perfect match in both size and tread. The farmer continued to refute the accusations. Hull informed him that he had found additional evidence as well. The warden ended the conversation by telling the inebriated man that he would not pursue the case any further that evening. Hull added that he would pay him a visit the next day after the alcohol had left his system.

Apparently Hull's words had been sobering enough for this hunter—the farmer called early the next morning and confessed to the crime. He also confessed that he had not slept a wink the night before. Maybe the man's conscience kept him awake, or perhaps it was the repeating sound of his own footfalls crunching in the snow. □

Book Review

by Marika Byrd

Lake Fishing in Virginia

Bob Gooch

University of Virginia Press

www.upress.virginia.edu

Black and white, 9" X 6" paperback with 157 pages

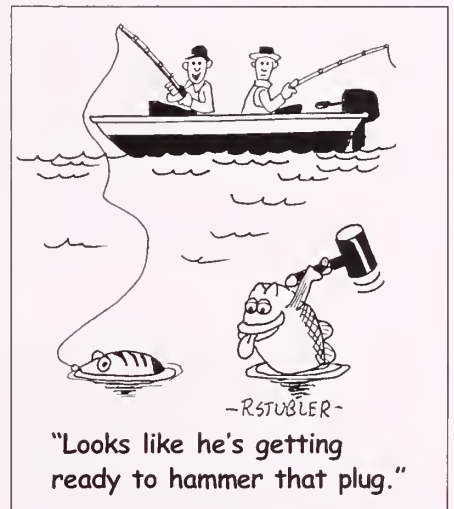
ISBN 0-8139-2286-0

The tackle-box sized publication is an easy "carry along" guide to lake fishing in Virginia. The contents include lakes by regional locations and a map showing the locations of properties operated by the Virginia Department of Game and Inland Fisheries (VDGIF), which includes the Northern Neck, Northwest Mountains and Valley, Southside, Southwest Virginia, Upper Piedmont and Coastal Plain, and managed fishing sites located in "multipurpose waters" and Virginia's state parks.

Each of the regional sections contains: a brief history, VDGIF office contact information, lake with county or city location and the acreage and travel directions.

A scan of the index shows not only page locations for the facilities but also a listing of the fish species. The named species run the gamut from bass, bluegill, carp, and catfish to trout and walleye.

"Reel in" your volume of the easy-to-read publication as a handy source the next time the fishing bug hits your fancy and you wonder where to catch a mess for the next meal. □



Corrections

There will be no dove hunting this year on Princess Anne WMA and Hog Island WMA proper, as published in the August 2005 issue of *Virginia Wildlife*. However, dove hunting will be permitted on the Carlisle Tract of Hog Island WMA. Signs will be posted at kiosks on each WMA noting the closers.

The Web site published in the September article *A Love of Labs* has been changed to: <http://www.smokey-hollowlabradors.com/>

On The Water

by Jim Crosby



Courtesy Afloat

We all know that road rage is a real life concern for motorists. Guess what? Let's consider some real life concerns for boaters. Have you ever bore the brunt of ramp rage, or witnessed water wrath? Over the years, I have observed many heated confrontations on the launch ramps and more than a few very emotional exchanges between boaters on the water—some of which resulted in property damage and even physical injury.

Courtesy provides the strongest legs for safety to stand on when on the highways or afloat. No one ever got heated over having the right of way relinquished to him or her. However, does anyone like a line jumper? Almost everyone I know can get riled when someone pulls in front of them at the grocery check-out or the launch ramp.

Ramp rage is very common because the launch ramp is a special place standing between the boater and the fun they seek afloat. The launch ramp is that place where there are so many things one can do to rattle others. This is usually compounded by a hot and sticky wait. Already high blood pressures can soar when a boater cuts in front of you and ten others to get in the water first. Or, on the other side of the issue, a boater waits until he or she is on the ramp to do all the make-ready chores that should have been done before even approaching the ramp.

This is a time to remember that the wait is allowing your brakes,

wheel bearings and taillights to cool before being dunked into the cold water. It is also valuable time for the bilge blower to purge your engine compartment of any deadly gas vapors lurking there that could deliver your boat to oblivion in a nanosecond upon activation of the starter motor. Considering the serious advantages of a down time between the tow and the launch can lower your blood pressure and better prepare you to ward off any impending ramp rage you might feel coming on.

Getting past the ramp, what could possibly happen out on the water that could fuel your wrath? How about that ski boat that comes roaring into your quiet cove to spray you with his rooster tail and leave you rocking and rolling in his wake? As a small boat fisherman, that could really leave you in a lurch and possibly toss you right out of your boat.

Picture a quiet cove where six or so boats have rafted up for a luncheon social. Just at the point where all the food is laid out and iced tea drinks have been poured, a cruiser comes in plowing and pushing three-foot waves to circle the group and leave the aqua-picnic in total disarray. The wrath of these boaters could have been turned into a friendly greeting and wave had the boater approached and circled the group at a no wake speed.

In many cases, waterfront property owners do not like recreational boaters because they don't respect their property rights. They assault

their docks, boats and bulkheads with their damaging wakes and the loud exhausts of the jet skiers disturb their peace and quiet with their repeatedly passing close by on the same course.

In a race to the fueling dock, I have seen boaters cut each other off in direct violation of the navigation rules. This also occurs in the rush to get to the launch ramp for a quick recovery. Boaters approach and overtake others in illegal and unsafe ways as unshakable proof that they have never read or considered the rules of navigation as published by the U.S. Coast Guard.

Can you imagine the damage a rogue wake can do around a launch ramp or fueling dock? These are all areas that call for a "no wake" speed even if they are not marked.

Thoughtless and inconsiderate acts such as these can ruin a picnic, a boat outing or fishing trip and drive a normally calm person to an outrageous reaction, which we will label water wrath. Water wrath can be completely cured by common courtesy and consideration of our fellow boaters.

For the incurable, we always preach that boaters and jet skiers must be responsible for their wake because they can be held legally liable for any and all damage their wake may cause. □

I always appreciate your feedback, questions and/or suggestions sent to jimcrosby@aol.com.

RECIPES

by Joan Cone

Buffleheads Are Excellent Table Fare

When Steve Griggs of Williamsburg called and asked if we would like some bufflehead breasts, I immediately said, "Yes," as this was a species I had never cooked and wanted to try.

These small, hardy diving ducks are late in migration and are found in salt and fresh water. Their striking black and white feathers make the bufflehead an obvious target for hunters.

Bufflehead breasts, when prepared in your crockpot, will be tasty and tender.

Menu

Dilled Baby Carrots
Buffleheads In Crockpot
Portobello Mushrooms
Cottage Cheese Salad
Beanie's Apple Crumb Pie

Dilled Baby Carrots

- 3/4 cup white wine vinegar
- 1/4 cup water
- 1/4 cup honey
- 1/2 teaspoon dried dillweed
- 1/2 teaspoon mixed pickling spices
- Dash of salt
- 1/2 pound baby carrots

Combine first 6 ingredients in a large saucepan and bring to a boil. Add carrots, cover, reduce heat and simmer 10 to 12 minutes or until crisp-tender. Remove from heat and pour mixture into a container. Chill and serve with a slotted spoon. Makes 10 to 12 appetizer servings.

Buffleheads in Crockpot

- 1 pound boned, skinned bufflehead duck breasts
- 1/2 cup orange juice
- 1/4 teaspoon onion powder
- 1/4 teaspoon thyme leaves
- 1/4 teaspoon dry mustard
- 1/4 cup currant jelly
- 2 tablespoons port wine

Place breasts in crockpot. In a small saucepan add next 5 ingredients and cook over medium heat until jelly is melted. Remove from heat and stir in wine. Pour mixture over duck breasts and cook on LOW for 8 to 9 hours. Thicken gravy with equal amounts of cornstarch and cold water.

Serve breasts over your favorite cooked pasta. Allow 3 to 4 breasts per person.

Portobello Mushrooms (For microwave)

- 4 medium portobello mushroom caps, cleaned
- 12 small sun-dried tomatoes
- 2 tablespoons olive oil
- 2 tablespoons balsamic vinegar
- 1/4 cup Parmesan cheese

Place mushroom caps, top sides down, in a 9-inch square microwavable baking dish. Place 3 sun-dried tomatoes on top of each mushroom cap. Drizzle with olive oil and vinegar. Sprinkle with cheese. Microwave on HIGH for 4 minutes or until heated through. Makes 4 servings, 1 mushroom each.

Cottage Cheese Salad

Arrange 4 cups torn mesclun salad greens on 4 salad plates. To each plate add 1/4 cup regular or low fat cottage cheese and 2 tablespoons chopped red pepper. Top each with 1 tablespoon toasted walnut pieces and 1 tablespoon balsamic vinaigrette dressing. Makes 4 servings.

Beanie's Apple Crumb Pie

This easy, delicious recipe was given to our family by Beanie Crispens of Charlottesville.

- 4 large Granny Smith apples
- 1/2 cup sugar
- 1 teaspoon cinnamon
- 1/2 cup sugar
- 2/3 cup flour
- 1/3 cup butter

Pare apples and cut each into eighths and place in a 9-inch deep dish pie crust. Mix 1/2 cup sugar with cinnamon and sprinkle over apples. Mix 1/2 cup sugar and 2/3 cup flour together. Cut in butter until crumbly. Sprinkle over apples. Bake in a preheated 375° F. oven for 45 to 50 minutes. Makes 8 servings. □



story and illustration
by Spike Knuth

Virginia Rail *Rallus limicola*

While fairly common in fresh, brackish, and saltwater marshes, the Virginia rail is rarely seen by the casual observer. Usually it is the bird's call that draws attention to its presence. In spring, during breeding, its call is a metallic clicking sound, described as "kid-ick, kid-ick, kid-ick." Throughout the rest of the year, it utters a variety of grunts, squeals, and cackles, or "cutta-cutta-cut-cut." However, hunters, watermen, or others who spend more time trekking through marshlands of sedges, cattails or salt marsh grass have a greater opportunity to spot this elusive rail. Usually it appears suddenly out of dense vegetation to feed quickly and briefly on exposed mud flats.

The Virginia rail is about 8 to 11 inches long, and weighs about 2½ ounces. It is basically olive-brown above, streaked with black, and with reddish-brown underparts, and black flanks barred with narrow lines of white. Its cheeks are ashy-gray, with a white throat, a white "eye brow," and dark crown. Its long bill is flesh or orange with black ridges and tip.

It rarely flushes, preferring to run from danger, but when it does, its flight is fluttery and weak. It will fly only a few yards before dropping suddenly into dense cover.

Virginia rails are found along the coast of Virginia all year round, but breed as far north as southern Canada from coast to coast. While they prefer freshwater marshes, they will also nest in brackish water marshes. Nesting begins in April with the nest being built in a

clump of vegetation. The nest is a loosely woven affair, usually with a canopy of grasses arching over it.

Anywhere from 6 to 13 eggs are laid; buff or cream-colored, speckled with brown and lavender. Studies have shown that 50 to 78 percent of the nests bring off young successfully. Most losses are due to flooding and predation by mammals. Incubation takes about 18-20 days. The female is very reluctant to flush from the nest once she has eggs. Once hatched, the young are able to leave the nest almost immediately and to run, swim and feed on their own. They are downy black in color. After 6 or 7 weeks they are able to fly.

Virginia rails are most active at twilight, feeding on the mudflats as they probe for small crustaceans, aquatic insects, small fish, worms, small

snakes, and terrestrial insects. In addition, they will eat duckweed, seeds of grasses, and berries. From their northerly breeding grounds Virginia rails migrate south in September and October, mainly at night. On the East Coast they winter mainly from New Jersey to Florida and Gulf States, and south to Cuba. □



Attention Deer Hunters

Checking your deer
just got easier with

1-866-GOT-GAME
(1-866-468-4263)

1. Notch the deer tag on your big game license prior to moving the deer.

Do not remove the tag from your license!

2. Check your deer by calling 1-866-468-4263 or take it to a check station.

3. Write check card number or telephone confirmation number on the license tag next to the notch.

4. Checking your deer by the Telephone Checking System may require that you create a Telephone Check Card. (See 2005-2006 Hunting Regulation booklet for details.)



**Thank you for supporting
wildlife management in
Virginia through hunting.**

This Holiday Season



Give The Gift That Will
Be Enjoyed All Year Long

Virginia Wildlife Magazine

For a limited time only you can give Virginia Wildlife magazine to 10 of your friends for only \$10.00 each. That's a savings of \$25 over the regular subscription price! This special holiday offer expires January 31, 2006.

Remember, even one subscription to Virginia Wildlife magazine is still a great gift at the low price of just \$12.95 per year. Simply include the full name and address of the person or persons to whom you would like to send a subscription. All orders must be prepaid. Make your check payable to Treasurer of Virginia. Mail to Virginia Wildlife, P.O. Box 11104, Richmond, VA 23230-1104. Please allow 6-8 weeks for delivery.



The New 2005-2006 Virginia Wildlife Calendar



Is Now Available

It's that time of year again to purchase the 2005-2006 Virginia Wildlife Calendar, one of the most informative and beautiful wildlife calendars in the country. No other calendar will give you the best times to go fishing and hunting, unique natural resource information that will amaze and educate you, and spectacular wildlife art and photographs that give you an up-close look at Virginia's incredible wildlife.

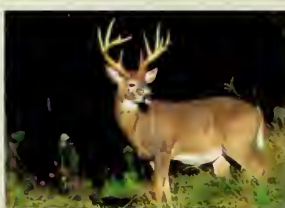
The Virginia Wildlife Calendar is a production of the Virginia Department of Game and Inland Fisheries, and customers are reminded that the wildlife calendar starts in September 2005 and runs through August 2006. Quantities are limited and sales will run from July 15 through December 31, 2005, so don't wait. Order now!

The 2005-2006 Virginia Wildlife Calendars are \$10.00 each. Make check payable to: *Treasurer of Virginia* and send to Virginia Wildlife Calendar, P.O. Box 11104, Richmond, VA. 23230-1104. If you would like to use your VISA or MasterCard you can order online at www.dgif.virginia.gov. Please allow 4 to 6 weeks for delivery.



©John R. Ford

©John R. Ford



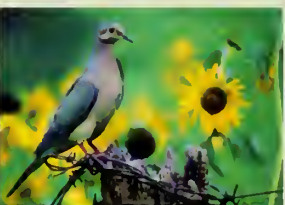
©John R. Ford



©Richard Day



©Maslowski Photo



©Bill Lindner Photography



©John R. Ford



For Virginia Wildlife subscription calls only 1-800-710-9369

Twelve issues for \$12.95

All other calls to (804) 367-1000

Visit our Web Site at www.dgif.virginia.gov